Rhizomnium nudum in Idaho

Karen Gray, White Pine Chapter

More than 100 years ago, in 1888, the editors of the Botanical Gazette published parts of letters they had received from John Leiberg. They wanted to give their readers "some glimpses of his botanical observations," and wrote,

> Although almost constantly in the saddle, Mr. Leiberg finds time to collect the plants of the region, and has sent in a number of new species. From Camp Lakeside, at the south end of Lake Pend d'Oreille, Mr. Leiberg writes: "I send by this mail a package of seventy species of mosses. They have been nearly all collected during the past three weeks, within a radius of two miles of this place, which is our winter camp. I have not yet collected at any great heights, as the snow lies several feet deep on the high peaks and ridges that surround us here. In about a month we will be able to cross over into the great North Fork of the Coeur d'Alene River basin, which lies immediately to the east of us. This basin abounds in high peaks, deep, dark cañons and chasms, waterfalls and cascades—just the conditions best suited to produce a flourishing growth of mosses, and I expect a rich harvest in these places. While this is a difficult country to collect in, one has at least the satisfaction of knowing that he is on ground on which *no one* has ever before collected . . . . The moss flora seems to be wonderfully well developed here. To date I have observed over 110 species within a radius of four miles. I do not think it would be an overestimate to count upon at least 500 species of mosses for Kootenai county. But it must be remembered that this county covers a large area—nearly 7,000 square miles—and that nearly all conditions of climate and soil in the temperate regions of North America are found here. Lichens and fungi also abound in these excessively damp woods. . . . "

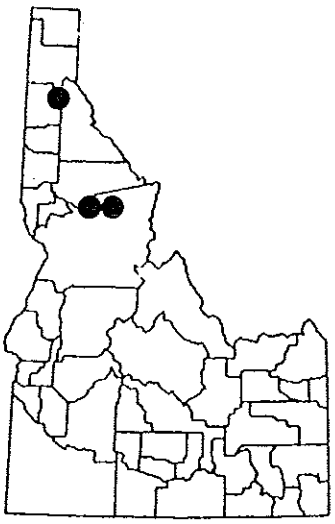
In 1888, Kootenai County encompassed the present-day Kootenai, Boundary, Bonner, and Benewah counties.

Leiberg was referring to scientific collecting, not to Native American collecting for subsistence purposes.

In May 1889, Leiberg collected *Rhizomnium nudum* near "cold springs on decaying wood, Traille River Basin." In 1973, Timo Koponen designated that specimen the lectotype of the species. (A lectotype is a specimen chosen as the type of a species if the author of the name fails to designate a type.) What Leiberg called the Traille River Basin is almost certainly the North Fork of the Coeur d'Alene River.

A few years later, in northwestern Montana, other collectors picked up *Rhizomnium nudum* specimens: R.S. Williams at Essex in 1896, and at Two Medicine Lake and the South Fork of Cutbank Creek in 1897; and Holzinger and Blake in 1898 from the vicinity of Lake McDonald. Subsequently, several other collections were made in Glacier Park and the Cabinet Mountains. Four occurrences are known from Alberta, three of them from Jasper National Park and one from Coleman (Letter, 1999, Alberta Natural Heritage Information Center).

These are inland locations for a moss that has a primarily west coast distribution in North America. Its range is from Alaska to northern California, with inland populations in northeastern Oregon, northern Idaho, northwestern Montana, and Alberta. Disjunct populations also occur in Japan and the Russian Far East.



Rhizomnium nudum distribution in Idaho.

Rhizomnium nudum grows in shady, moist forests, often near the edges of rivulets or creeks, sometimes in moist depressions. Its substrate may be damp forest soil, humus, or rotten logs. It is found from near sea level in Alaska and northern British Columbia to subalpine zones in Washington and inland North American sites. Koponen (1973) states that, "Ordinarily, the distribution of *R. nudum* seems to be determined by a cool and oceanic type of climate."

Recently, *Rhizomnium nudum* has been collected in a few localities on the Clearwater National Forest. In 1993, Sarah Walker made a collection in the Selway-Bitterroot Wilderness. She discovered it growing in a moist depression along the Boulder Creek Trail under grand fir (*Abies grandis*) and western redcedar (*Thuja plicata*) at 3,500 feet elevation. In 1998, she found a population near Cliff Creek, growing in continuous patches under alder (*Alnus sinuata*) and menziesia (*Menziesia ferruginea*), with lady fern (*Athyrium filix-femina*) and leathery grape-fern (*Botrychium multifidum*). Small patches also occur sporadically along Eldorado Creek and two of its tributaries, Dollar Creek and Four-bit Creek, at elevations from 3,560 feet to 4,300 feet. Karen Gray found it there in 1994, '95, and '96 near stream edges on very rotten logs, on duff, or on duff over rocks. Although *R.*

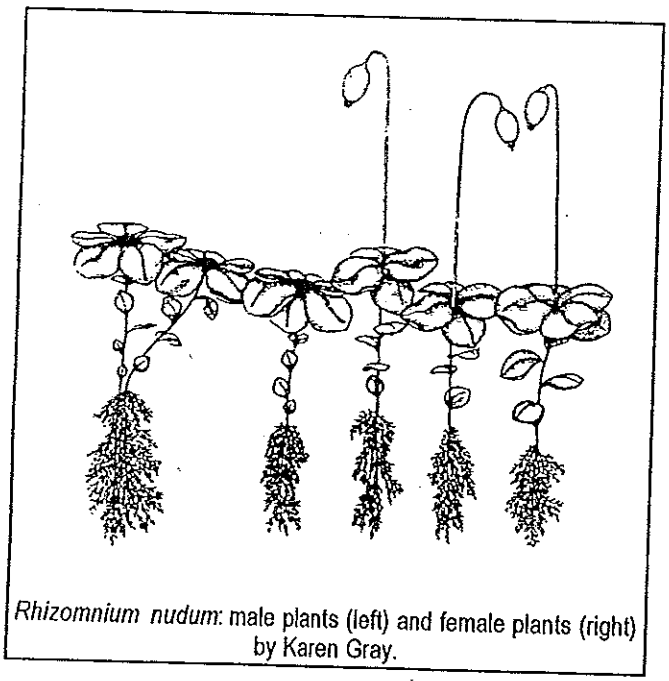
nudum often occurs in subalpine forests, the sites in the Eldorado drainage are in fragments of old western redcedar forests that have subalpine elements: subalpine fir (*Abies bifolia*) and spruce (*Picea engelmannii*).

Elizabeth Britton and R. S. Williams published a description of the moss and named it *Mnium nudum* in The Bryologist in 1900. They didn't designate a type specimen, but they listed Leiberg's collection first. To their subscribers, they offered specimens with printed labels for 7 cents apiece. Timo Koponen later changed the genus name from *Mnium* to *Rhizomnium*.

Rhizomnium nudum is rather large-leaved for a moss. The plants are 1-5 cm tall and form loose, dark-green tufts. The stems are unbranched and reddish-brown, with few or no rhizoids on the leafy portion. (Rhizoids are the tiny, root-like hairs on the stem.) The leaves are glossy and nearly round; they shrivel or contort very little when they dry. The leaf borders are of elongated cells, but they are only one layer thick at the apex of the leaf and only a few layers thick below. The midrib of the leaf usually ends below the apex.

Male plants and female plants are separate and different. The males look like green flowers. They often have small or few leaves on the lower part of the stem, but they have rosettes of large leaves that act as splash-cups surrounding the disk-like heads. Raindrops splash sperm from the antheridia clustered in the centers of the splash-cups. With luck, they land near the vase-like archegonia of the female plants. The fertile female plants bear single stalks, each with an ovoid, nodding or inclined capsule.

Rhizomnium nudum is fairly common in Washington State and British Columbia. It is considered rare in the Columbia River Basin (Christy and Harpel 1997), however, and is tracked in Oregon, Alberta, and Idaho.



Rhizomnium nudum: male plants (left) and female plants (right) by Karen Gray.

Further reading

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